

# ABSTRACT

Relatively low cost asymmetric digital subscriber line (ADSL) service and auxiliary POTS service are delivered over extended distances (e.g., at least 20-25 kft), by a hybrid ADSL-SDSL architecture insertable  
5 between central office and remote sites of an ADSL system. Central office and remote site transceivers employ trellis coded pulse amplitude modulation and a data rate that conforms with the signal transport capability of an extended distance symmetric DSL (SDSL)  
10 loop, while providing a 64K POTS channel. The central office and remote site transceivers controllably insert idle asynchronous transfer mode (ATM) cells in upstream and downstream ADSL channels to compensate for timing differences with ADSL equipment.

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